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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,659	04/04/2006	Giovanni Ferraro	R.306280	7902
2119 7590 08/11/2009 RONALD E. GREIGG GREIGG & GREIGG P.L.L.C. 1423 POWHATAN STREET, UNIT ONE ALEXANDRIA, VA 22314				
EXAMINER FOX, JOHN C				
ART UNIT 3753		PAPER NUMBER		
MAIL DATE 08/11/2009		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/574,659

Applicant(s)

FERRARO ET AL.

Examiner

John Fox

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-41 and 43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30-41 and 43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 June 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

The amendment to the specification of June 3, 2009 is objected to and is not entered. The description of the valve of EP 0 690 223 is objected to in that element 8 thereof is not disclosed as an actuator, it is disclosed as a rod. The actuator is pilot solenoid 26. There is no piezo electric actuator in EP '223 nor does the rod 8 change in length.

The amendment to the specification should be corrected to at least refer to Figure 4 in the brief description of the drawings and an accurate description thereof.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "said piezoelectric actuator being operable to open and close the opening located in the valve housing proximate the end of the actuator chamber opposite from said one end of the actuator chamber" should be shown. No new matter should be entered.

The objection is maintained in that new Figure 4 does not show the claimed subject matter. Neither EP '233 nor EP '136, referred to by Applicant, show the claimed subject matter, and thus fail to correct the defect in the drawing.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 30-41 and 43 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claim recitation "an opening located in the valve housing proximate an end of the actuator chamber opposite from said one end of the actuator chamber" does not appear in the original specification.

Applicant's arguments have been fully considered but they are not persuasive. Applicant points to paragraph 25 of the disclosure, but that disclosure says the opening is located "diametrically opposite the conical face 14" and there is no explanation of what diameter is being referred to or how a reference to a diameter relates to an axially located opening.

Claims 30-41 and 43 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. There is no enabling disclosure of "an opening located in the valve housing proximate an end of the actuator chamber opposite from said one end of the actuator chamber" and of "said piezoelectric actuator being operable to open and close the opening located in the valve housing proximate the end of the actuator chamber opposite from said one end of the actuator chamber".

Applicant's arguments have been fully considered but they are not persuasive. Applicant argues that the disclosure related to the Prior Art of Figure 1 and the two EP documents would be sufficient to enable one of ordinary skill in the art to arrive at the claimed valve. The Examiner disagrees. The Prior Art of Figure 1 is disclosed as having a ram 31 which changes in length to open a pilot valve, as far as the issue can be understood. This disclosure is far removed from an enabling disclosure of an operable valve actuator, in the Examiner's opinion. The two EP documents show valve actuators which include parts of the claimed actuator but they are each different from each other and the claimed actuator, and there is no nexus between the three leading a routineer in the art to arrive and the claimed device. Accordingly, this rejection will be maintained.

Claims 30-41 and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The scope and meaning of the claims are indefinite in that the actuator recitations cannot be understood. The only disclosure of an actuator in the application is with respect to the Prior Art of Figure 1. Applicant argues that the claims are an accurate description of Figure 1 but also argues that they distinguish over the piezoelectric actuator of Figure 1. It is logically impossible for both arguments to be valid simultaneously.

Claims 30-41 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cerny in view of the Prior Art of Figure 1 of the application, as far as the claims can be understood.

Cerny shows a fuel injector with a plurality of inlet bores 120 leading to a portion 116 of an actuator chamber which comprises contiguous bores 116, 48, 36, 38, and 94, a cap 70, conical seat 72, and enlargement 46. The valve of Cerny is read as relating to high pressure in that such recitation is relative. The bores 120 are read as smaller than a hypothetical valve with one bore. In the alternative, the sizing of the bores 120 to be each smaller than a theoretical single bore is considered to be an obvious matter of design choice in that it is readily apparent that such would maintain the design flow of the valve.

Cerny shows the claimed valve except for a central inlet. Figure 1 shows a fuel injector with a central inlet 12. It would have been obvious for one of ordinary skill in the art at the time the invention was made to have used such a central inlet in the valve of Cerny in place of lateral inlet 60 under the rationale set forth in *KSR v. Teleflex*, 550

U.S. ___, 127 S. Ct. 1727, 82 U.S.P.Q.2d 1385 (2007) that the simple substitution of one known element for another to obtain predictable results is obvious.

Cerny teaches the claimed device except for a piezoelectric actuator. Figure 1 is disclosed as including a piezoelectric actuator. It would have been obvious for one of ordinary skill in the art at the time the invention was made to have used such a piezoelectric actuator in place of the solenoid of Cerny under the rationale set forth in *KSR v. Teleflex*, 550 U.S. ___, 127 S. Ct. 1727, 82 U.S.P.Q.2d 1385 (2007) that the simple substitution of one known element for another to obtain predictable results is obvious.

Applicant's arguments have been fully considered but they are not persuasive. Applicant argues that Cerny is concerned solely with the valve seat end of the injector. In fact, Cerny disclosed an operable actuator as well. It is believed that the simple substitution of one actuator for another is within the ambit of § 103, and the rejection is proper and should be maintained.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Fox whose telephone number is 571-272-4912. The examiner can normally be reached on Monday-Saturday from 10am-6pm (Hoteling Program).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Huson can be reached on 571-272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John Fox/
Primary Examiner
Art Unit 3753

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